

# Skunk the Skunk



What works, and doesn't work, for removing the odoriferous defensive secretion of *Mephitis mephitis*.

Story By Stephen Vantassel, Scott Hygnstrom and Dennis Ferraro  
Photos By Joe McFarland

***Mephitis mephitis***  
**translates**  
**to “noxious gas,**  
**noxious gas.”**

**W**henver conversations turn to skunks the inevitable question pops up: “Have *you* ever been sprayed?” It seems everybody loves a good, personal horror story. And, since many of us have personally suffered nature’s ultimate stench, experimenting with de-skunking remedies that didn’t work, perhaps it’s time to clear the air about certain skunk facts.

## **Background**

Skunks are famous for their odorous defensive spray, known as musk. They don’t like the odor any more than

humans, and the odor does not emanate from the skunk as it does in the PePe LePew cartoons—it is shot out at distances of 6 to 10 feet.

Skunk musk is a yellow-tinted, oily liquid stored in two sacks located on opposite sides of the skunk’s anus. Each sack holds about a teaspoon of musk; enough to allow multiple sprays.

Skunks have specially designed anatomical features to discharge the musk called “nipples.” These nipples provide skunks with three advantages. First, each nipple is connected to its own musk sack, allowing the skunk to shoot with “both barrels.” Second, the nipples can be directed to aim at a specific target. Third, the nipples can



# Scent

(Photo courtesy Missouri Department of Conservation.)

Encountering a skunk can leave a lasting impression. What works, and doesn't work, to remove skunk musk?

adjust to spray the musk as a mist or a stream.

Skunk musk is composed of seven ingredients: three volatile chemicals (thiols), three thioacetate derivatives of the thiols and an alkaloid. The awful smell comes from the thiols. Research has shown that humans can smell skunk musk in concentrations as low as 10 parts per billion.

Skunk musk does not transmit rabies. In one study, 51 rabid skunks had their musk (and surrounding tissue) tested for the presence of the rabies virus. All were negative.

The spray can temporarily blind and stun individuals unlucky enough to be hit in the face. Victims will experience

watering eyes and may even vomit. Asthmatics also may experience difficulties in breathing when exposed to the odor.

## Odor Theory

Three elements must be present before someone can smell an odor. First, there must be an odor source. Second, the odor must be released. Finally, the odor must be perceived. Remove any single part of the odor triad and there will be no perception of odor.

With the exception of burying unwanted materials, odor control methods try to prevent the release of odor by encapsulating them usually are impractical. Most effective odor control techniques either remove the odor or stop our ability to smell it.



**There are better and less messy ways to deodorize skunk odor than using tomato juice.**

## General Deodorizing Principles

Treat the source. Deodorants work best when applied directly on the target of the skunk's spray.

Avoid unnecessary movement of contaminated materials to reduce spreading odors.

Ventilate with fresh air.

Understand that skunk odor may "reactivate" during periods of high humidity.

If the odor doesn't decline in strength after a week or two, perhaps the skunk has re-sprayed or has died on the property.

Use air fresheners as needed to mask any residual odor.

Be aware that women are more likely to notice odors than men. Research suggests women are biologically wired to have noses more sensitive than men.

## Deodorizing Treatment

An odor can be effectively controlled by chemically changing it into a less offensive one. In the case of skunk musk, relief can be achieved by oxidizing the thiols. Odors also can be controlled by covering the unpleasant odor with a preferable one. Ultimately, both strategies have their role in gain-

## Tomato juice doesn't work

The reason people continue to think that tomato juice is an effective deodorant stems from a phenomenon called Olfactory Fatigue—in the presence of a persistent odor, you will begin to stop smelling it. So when a new odor is introduced, such as tomato juice, you begin to smell it because it is "new." It is similar to the way that, over time, we tune out a persistent noise so that we only hear the new noises.



ing success over skunk musk. The term "neutralize" refers here to products that chemically interact with skunk musk. The term "scent" describes products that simply mask the skunk musk odor. "Deodorizing" describes all products that mitigate the skunk odor regardless of the mechanism.





**An effective neutralizing agent for skunk odor is a mixture of hydrogen peroxide, baking soda and liquid detergent, but cautious use is required.**

gallon of water. Be careful as bleach has corrosive and staining properties.

“Color safe” might not work.

Never overlook simply washing one’s body and clothes. Even using plain water will help to mitigate the smell.

### **Electric Atomist Sprayers/Foggers**

Sometimes the skunk odor is so dispersed that fogging a deodorant is necessary. Atomizers, by converting the deodorant solution into a fine mist, provide two key advantages for odor control over hand pump sprayers. First, small droplets stay airborne longer, thereby circulating throughout the treatment area. Second, smaller droplet sizes allow less product to be used because they have greater surface area to volume than larger droplets. As a rule of thumb, 16 ounces of neutralizing deodorant solution, atomized with a droplet size of 15 microns, can deodorize a 1,500 square foot residence.

### **Deodorizing Fabric**

Since the skunk’s spray is an oily compound, it can be removed from fab-

### **Deodorizing Products Home Remedies/Over the Counter**

A variety of commercial odor-control products are available. However, reviews are mixed.

A formula that has proven to chemically neutralize the odorous thiols is 1 quart of 3-percent hydrogen peroxide, 1/4 cup of baking soda and a teaspoon of liquid detergent. Ingredients must be mixed in an open container and used immediately. Never mix the ingredients in advance as the oxygen in the hydrogen peroxide may be released, causing the container to explode. Any left over mixture should be discarded. This formula can be used on people or pets, but avoid splashing the product in the

eyes or mouth. Allow the solution to remain in hair for five minutes before rinsing with water. Repeat as needed.

For inanimate objects only, mix one cup of liquid laundry bleach into one



**A healthy dose of fresh air is a cheap, but lengthy, fix for removing the skunk scent from clothing.**



## Precautions

**S**ome deodorants contain toxic materials. All chemicals—whether natural or man-made—should be used in a manner that reduces exposure levels.

- Carefully read safety and first-aid guidelines on the product label prior to mixing and applying any product. If a poisoning event occurs provide medical personnel with the name of the chemical, approximate amount/severity of exposure, age and weight of the victim.
- Use deodorants in well-ventilated areas.
- Deodorant products may cause adverse reactions in people sensitive to the ingredients, and individuals don't always know what substances will cause an allergic reaction.
- Never mix deodorants with other chemicals or products unless the directions specifically permit it.
- Special care should be taken to avoid exposing children, pets and plants to chemicals unnecessarily.
- Remove or secure food stuffs and food preparation areas before applying deodorants whenever possible.
- Some products may discolor fabrics and other materials. Always test the product on a less noticeable area prior to treating more visible areas to evaluate its effect on the material.
- Whenever odors penetrate porous surfaces like sheet rock, unpainted wood, etc., multiple deodorant treatments may be necessary. Sometimes removal of contaminated materials will be the only solution.
- Ozone is hazardous to people, pets and plants. It is advisable that ozone generators be used only by qualified and experienced odor control professionals.

rics by methods used to remove oily soil: time, air, soap and water, ammonia in water and a weak acid. White vinegar, dry-cleaning fluid or household chlorine bleach in a weak solution—used in separate steps, not together—is suggested for removing skunk odor from clothing.

**Bury the scent! Many claim soil particles will absorb the skunk odor.**

Other recommended treatments include washing items with a strong soap, a heavy-duty liquid detergent or borax. Consumers have reported that methyl salicylate (see [www2.siri.org/msds/f2/bcj/bcjdz.html](http://www2.siri.org/msds/f2/bcj/bcjdz.html)), used at a rate of 1 ounce per 2 gallons of warm water, can be effective for deodorizing washable items. The manufacturer does not offer evidence for laundry and carpet use.



(Photo by Kathy Andrews.)



**Fine-particle materials, such as kitty litter, may soak up evidence of a skunk encounter.**

For clothing that cannot be washed or dry-cleaned, such as shoes, some suggest burying them in fine, dry soil for several days. The fine particles of soil are purported to absorb the odor, leaving the original article odor free. Kitty litter, sweeping compound and other fine-particle materials also are alleged to work.

Odorous materials can be hung outdoors allowing fresh air to carry away the volatile thiols.

Located at the University of Nebraska, Stephen Vantassel is Project Coordinator, Scott Hygnstrom is Extension Specialist and Dennis Ferraro is Extension Educator.

**F**or more information on skunk management and control, visit [www.icwdm.org/wildlife/skunk/skunks.asp#Deodorizing\\_Skunk\\_Odor](http://www.icwdm.org/wildlife/skunk/skunks.asp#Deodorizing_Skunk_Odor).